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EXAMINER

WILSON, ROBERT W

ART UNIT	PAPER NUMBER
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2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/782,530

Applicant(s)

MURANAKA ET AL.

Examiner

Robert W. Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7,8,10-13 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 5,6,9,14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/13/06 & 2/19/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Claim Objections

1. Claims 5-6 & 14-15 are objected to because of the following informalities: Referring to claims 5 & 6, the examiner objects to the usage of the slash between input and output because the slash can be interpreted as "and" or "or". The examiner suggests that the applicant clarify the meaning of the slash in the arguments. For purpose of examination the examiner interpreted the slash as "or". Appropriate correction is required.

Claim Objections

2. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 10, & 11 are rejected under 35 U.S.C. 102(A) as being anticipated by Huang (U.S. Patent No.: 6,480,488).

Referring to claim 1, Huang teaches: A network routing apparatus (Fig 2) , comprising: a plurality of routing units (Port Controller per Fig 2 or 21 per Fig 3) each connected to at least one line (20xa to 20xn where x is 0 to 3 per Fig 2 or lines) wherein each of said plurality of routing units receives a packet from a line (data packet inherently comes in on a line to the MAC 211 per col. 2 lines 10 to 30) extracts outgoing destination information using a packet header included in the packet received (MAC extracts DA (destination address) per col. 2 lines 1 to 59) and routes the received packet in accordance with the output destination information (col. 2 lines 1 to 59)

A switching unit (Switching Fabric (24 per Fig 1 or Fig 3) connected to each of said plurality of routing units (Port Controller per Fig 2 or 21 per Fig 3) wherein said switching unit receives from each of said routing units a packet and outputs destination and in accordance with said

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output destination information transfer the packet received to any of said plurality of routing units (col. 1 lines 50 to col. 2 lines 59)

Each of said routing units further comprising:

One of a plurality of transfer means (The combination of MAC and DATA Queue per Fig 3) each connected to at least one line wherein said plurality of transfer means each extract and output a packet header of the packet received from each line (col. 1 line 50 to col. 2 line 59)

One or a plurality of search means (Address Table and Router per Fig 3 and per col. 1 line 50 to col. 2 line 59) each connected to said plurality of transfer means (Combination of MAC and DATA Queue per Fig 3) wherein said plurality of search means each receive the packet header from each of said plurality of transfer means, extract the output destination information by use of the packet header and output the output destination information (col. 1 line 50 to col. 2 line 59)

One of said plurality of switch input/output means (input/output ports on Data Queue per Fig 3) each for receiving the received packet and output destination information and transmitting the received packet to said switching unit (Switch Fabric per Fig 2 or Fig 3) or each of said plurality of transfer means (the combination of MAC and DATA Queue per Fig 3) in accordance with the output destination information (DA which maps into port per col. 1 line 50 to col. 2 line 59)

Referring to claim 10, Huang teaches: A network routing apparatus (Fig 2) , comprising:

a plurality of routing units (Port Controller per Fig 2 or 21 per Fig 3) each connected to at least one line (20xa to 20xn where x is 0 to 3 per Fig 2 or lines) wherein each of said plurality of routing units receives a packet from a line (data packet inherently comes in on a line to the MAC 211 per col. 2 lines 10 to 30)

A switching means (Switching Fabric (24 per Fig 1 or Fig 3) connected to each of said plurality of routing units (Port Controller per Fig 2 or 21 per Fig 3) wherein said switching means transfers to any one of said routing units (Port Controller per fig 2 or 21 per Fig 3) the packet received to any of said plurality of routing units (col. 1 lines 50 to col. 2 lines 59)

Each of said routing units further comprising:

One or a plurality of transfer means (The combination of MAC and DATA Queue per Fig 3) each connected to at least one line wherein said plurality of transfer means each extract and output a packet header of the packet received from each line (col. 1 line 50 to col. 2 line 59)

One or a plurality of search means (Address Table and Router per Fig 3 and per col. 1 line 50 to col. 2 line 59) each connected to at least one line (20xa to 20xn where x is 0 to 3 per Fig 2 or line) wherein said plurality of transfer means (Combination of MAC and DATA Queue per Fig

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3) extract and output a packet header of the packet received from each line (inherently per form by MAC per col. 1 line 50 to col. 2 line 59) and

One or said plurality or said plurality of search means (combination of address table and router per Fig 3) each connected to each of said plurality of transfer means (MAC and DATA Queue per Fig 3) wherein said plurality of search means (combination of address table and router per Fig 3) each receive the packet header from each of said plurality of transfer means, extract output destination information using the packet header and output the output destination information (col. 1 line 50 to col. 2 line 59)

Wherein each of said routing units is either:

A first routing unit (Port Controller per Fig 3) in which one of said search means (the combination of address table and router per Fig 3) is connected to one of said transfer means (MAC and Data queue per Fig 3)

A second routing unit in which said plurality of transfer means are connected to one of said search means,

A third routing unit in which said plurality of search means are connected to one of said transfer means or

A fourth routing unit in which said plurality of transfer means and said plurality of search means are connected to one another

Referring to claim 11, Huang teaches: A routing unit (Port Controller per Fig 2 or Fig 3) in a routing apparatus (Fig 2) which is connected to a plurality of lines (20xa to 20xn where x is 0 to 3 per Fig 2 or lines) to route a packet received on each line (col. 1 line 50 to col. 2 line 59), said routing unit comprising:

One or a plurality of transfer means (The combination of MAC and DATA Queue per Fig 3) each connected to at least one line (20xa to 20xn where x is 0 to 3 per Fig 2 or line) wherein said plurality of transfer means each extract a packet header from at least one line (MAC inherently extracts packet header per Fig 3 and per col. 1 line 50 to col. 2 line 59)

One or a plurality of search means (the combination of Address Table and Router per Fig 3 and per col. 1 line 50 to col. 2 line 59) each connected to said transfer means (the combination of MAC and DATA Queue per Fig 3) wherein said plurality of search means each receive the packet header, extract the output destination and using the packet header and output the output destination information (col. 1 line 50 to col. 2 line 59)

Wherein each one of said plurality of search means (the combination of Address Table and Router per Fig 3) are connected to each of said plurality of transfer means (the combination of MAC and DATA Queue per Fig 3)

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And one or said plurality of transfer means (The combination of MAC and DATA Queue per Fig 3) each output the packet header to said plurality of connected search means (the combination of Address Table and Router per Fig 3 and per col. 1 line 50 to col. 2 line 59)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4 & 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Huang (6,480,488) in view of Gupta (U.S. Patent No.: 5,787,070)

Referring to claim 2, Huang teaches: the network routing apparatus (Fig 3) according to claim 1, comprising said routing Unit (Port controller 20 per Fig 2) a first routing unit (Port controller per Fig 3) in which one of said search means the combination of address table and router per Fig 3) is connected to one of said transfer means (the combination of MAC and DATA Queue per Fig 3) a second routing unit (21 per Fig 3) a third routing unit (22 per Fig 3) and a routing unit (23 per Fig 3) each having a single search means connected to a single transfer means per Fig 3.

Huang does not expressly call for: plurality of transfer means or plurality of search means

Gupta teaches: a redundancy module to backup a service module per Fig 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add backup modules of Gupta to both the transfer means and search means of Huang in order to build a system which has higher reliability which would result in the architecture of the claimed invention.

Referring to claim 3, Huang teaches: the network routing apparatus (Fig 3) according to claim 1, comprising said routing Unit (Port controller 20 per Fig 2) and a first routing unit (Port controller per Fig 3) in which said plurality of search means (the combination of address table and router per Fig 3) is connected to one of said transfer means (the combination of MAC and DATA Queue per Fig 3)

Huang does not expressly call for: plurality a plurality of search means

Gupta teaches: a redundancy module to backup a service module per Fig 2.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to add backup modules of Gupta to search means of Huang in order to build a system which has higher reliability which would result in the architecture of the claimed invention.

Referring to claim 4, Huang teaches: the network routing apparatus (Fig 3) according to claim 1, comprising said routing Unit (Port controller 20 per Fig 2)

a first routing unit (Port controller per Fig 3) in which one of said search means the combination of address table and router per Fig 3) is connected to one of said transfer means (the combination of MAC and DATA Queue per Fig 3)

Referring to claim 12, Huang teaches: the routing unit (Port Controller per (Fig 3) according to claim 11, wherein said search means (the combination of address table and router per Fig 3) is connected to one transfer means (the combination of MAC and DATA Queue per Fig 3) and wherein said transfer means output the packet header to said search means per col. 1 line 50 to col. 2 line 59

Huang does not expressly call for: plurality of plurality of search means.

Gupta teaches: a redundancy module to backup a service module per Fig 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add backup modules of Gupta to search means of Huang in order to build a system which has higher reliability which would result in the architecture of the claimed invention.

Referring to claim 13, Huang teaches: the routing unit (Port Controller per (Fig 3) according to claim 11, wherein said search means (the combination of address table and router per Fig 3) is connected to one transfer means (the combination of MAC and DATA Queue per Fig 3) and wherein said transfer means output the packet header to said search means per col. 1 line 50 to col. 2 line 59

Huang does not expressly call for: plurality of plurality of transfer means

Gupta teaches: a redundancy module to backup a service module per Fig 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add backup modules of Gupta to transfer means of Huang in order to build a system which has higher reliability which would result in the architecture of the claimed invention.

7. Claims 7-8 & 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Huang (6,480,488) in view of Brunius (U.S. Patent No.: 4,614,945)

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Referring to claim 7, Huang teaches the network routing apparatus (Fig 2) according to claim 1 and transfer means that has an output means for outputting the packet header to each of said search means per col. 1 lines 50 to col. 2 lines 59

Huang does not expressly call for: a retaining means that retains connection information for identifying the number of said search means connected to said transfer means and an output means that outputs each value to the search means in a bit increments associated with the connection information

Brunius teaches: retaining means that retains connection information for identifying the number of said search means connected to said transfer means and an output means that outputs each value to the search means in a bit increments associated with the connection information (Fig 33 is a circuit comprising counters (retaining means) which output a connection information to the bus so that the bus can act as a transfer means between modules to output the value in bit increments associated with a connection per col. 52 lines 49 to col. 53 line 11)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the retaining means and transfer means of Brunius to the routing apparatus of Huang in order for the Port Controller to process line inputs into the Port Controller.

Referring to claim 8, Huang teaches the network routing apparatus (Fig 2) according to claim 1 and search means that has an output destination information per col. 1 lines 50 to col. 2 lines 59

Huang does not expressly call for: a retaining means that retains connection information for identifying the number of said transfer means connected to said search means and an output means that output the output destination information in bit increments associated with the connection information to said transfer means

Brunius teaches: a retaining means that retains connection information for identifying the number of said transfer means connected to said search means and an output means that output the output destination information in bit increments associated with the connection information to said transfer means (Fig 33 is a circuit comprising counters (retaining means) which output a transfer information to the bus so that the bus can act as a transfer means between modules to output the value in bit increments associated with a connection per col. 52 lines 49 to col. 53 line 11)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the retaining means and transfer means of Brunius to the routing apparatus of Huang in-order for the transfer means to receive data in the appropriate order form the search means.

Referring to claim 9, the combination of Huang and Brunius teach the network routing apparatus (Fig 2) according to claim 8 and search means that has an output destination information per col. 1 lines 50 to col. 2 lines 59 of Huang and wherein said output means outputs the output

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destination information to said transfer means identified by the identification information per per col. 52 lines 49 to col. 53 line 11 of Huang)

Huang does not expressly call for: second retaining means that retaining identification information for identifying sand transfer means

Brunius teaches: second retaining means that retaining identification information for identifying sand transfer means (Fig 33 is a circuit comprising 2^{nd} counters (or second retaining means) which output a transfer information to the bus so that the bus can act as a transfer means between modules to output the value in bit increments associated with a connection per col. 52 lines 49 to col. 53 line 11)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the 2^{nd} retaining means of Brunius to the routing apparatus of Huang and Brunius in order for the transfer means to receive data in the appropriate order from the search means.

Referring to claim 16, Huang teaches the routing unit (Port Controller per Fig 3) according to claim 11 and transfer means that has an output means for outputting the packet header to each of said search means per col. 1 lines 50 to col. 2 lines 59

Huang does not expressly call for: a retaining means that retains connection information for identifying the number of said search means connected to said transfer means and an output means that outputs each value to the search means in a bit increments associated with the connection information

Brunius teaches: retaining means that retains connection information for identifying the number of said search means connected to said transfer means and an output means that outputs each value to the search means in a bit increments associated with the connection information (Fig 33 is a circuit comprising counters (retaining means) which output a connection information to the bus so that the bus can act as a transfer means between modules to output the value in bit increments associated with a connection per col. 52 lines 49 to col. 53 line 11)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the retaining means and transfer means of Brunius to the routing unit of Huang in order for the Port Controller to process line inputs into the Port Controller.

Referring to claim 17, Huang teaches the network routing apparatus (Port Controller per Fig 3) according to claim 11 and search means that has an output destination information per col. 1 lines 50 to col. 2 lines 59

Huang does not expressly call for: a retaining means that retains connection information for identifying the number of said transfer means connected to said search means and an output

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means that output the output destination information in bit increments associated with the connection information to said transfer means

Brunius teaches: a retaining means that retains connection information for identifying the number of said transfer means connected to said search means and an output means that output the output destination information in bit increments associated with the connection information to said transfer means (Fig 33 is a circuit comprising counters (retaining means) which output a transfer information to the bus so that the bus can act as a transfer means between modules to output the value in bit increments associated with a connection per col. 52 lines 49 to col. 53 line 11)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the retaining means and transfer means of Brunius to the routing unit of Huang in order for the transfer means to receive data in the appropriate order from the search means.

Referring to claim 18, the combination of Huang and Brunius teach: the routing unit (Port Controller per Fig 3) according to claim 11 and search means that has an output destination information per col. 1 lines 50 to col. 2 lines 59 of Huang and wherein said output means outputs the output destination information to said transfer means identified by the identification information per col. 52 lines 49 to col. 53 line 11 of Huang)

Huang does not expressly call for: second retaining means that retaining identification information for identifying said transfer means

Brunius teaches: second retaining means that retaining identification information for identifying said transfer means (Fig 33 is a circuit comprising 2nd counters (or second retaining means) which output a transfer information to the bus so that the bus can act as a transfer means between modules to output the value in bit increments associated with a connection per col. 52 lines 49 to col. 53 line 11)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the 2nd retaining means of Brunius to the routing unit of Huang and Brunius in order for the transfer means to receive data in the appropriate order from the search means.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075.

The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571/272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Robert W Wilson
Examiner
Art Unit 2616

RWW
7/13/07